UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/041,848	10/24/2001	Dean Warren	884.311US1	5505

7590   10/29/2004

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EXAMINER
MYERS, PAUL R

ART UNIT	PAPER NUMBER
2112	

DATE MAILED: 10/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>13 September 2004</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-19</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☒ Claim(s) <u>14</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
   application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed 9/13/04 have been fully considered but they are not

persuasive.

In regards to applicants argument that the office action fails to establish proper

motivation to combine the references: This is incorrect. The motivation was provided see office

action page 2 of office action.

In regards to applicants argument that the action mentions Stephenson's sync detect with

out citation to supporting text or drawings (See Stephenson Title, Abstract, figures 1-6 and

Columns 1-16) The examiner notes Stephenson's invention is a Sync detect. Stephenson merely

lacks teaching of well known NRZI (non return to zero invert) format in a USB system.

In regards to applicants argument that it is unclear as to what sync detect the office action

is proposing to modify. The Sync detect of Govindaraman (Figure 1) is to be modified by the

teachings of Stephenson's sync detect including Stephenson having the system be parallel.

In regards to applicants argument that Govindaraman teaches the sync detect being in a

serial stream: The examiner agrees. Stephenson teaches the stream being parallel.

In regards to applicants argument that the action fails to address the recitations of claim

10: This is incorrect. See Office action Page 2. The examiner will try to be more precise. As

provided in the response to claim 1: Govindaraman teaches receiving the USB data stream; Both

Stephenson and Govindaraman searching for the frame delineation marker in data received.

Stephenson teaches the use of concurrent comparators; Stephenson teaches asserting a flag upon

detection of the frame delineation marker (Found); and creating a vector indicating a location of

a frame boundary in the data stream (F6 and 28 The outputs of 32 and 34).

In regards to applicants argument that Stephenson does not teach an 11 bit vector. Claim

16 includes the comprises language meaning that it has an 11 bit vector and can include more.

Stephenson teaches a 16 bit vector. A 16 bit vector is an 11 bit vector + a 5 bit vector. Just

because Stephenson teaches more than the applicants are claiming does not alleviate that

Stephenson teaches 11 bits.

In regards to applicants argument that Amoni does not disclose a USB transceiver:

Amoni teaches USB connectors in accordance with the USB specification incorporated by

reference (Column 3 lines 26-33). A USB transceiver (transmitter/receiver) is part of the USB

specification (See for example section 7.1.3 of the USB specification).

In regards to applicants argument that Amoni does not teach a serial interface engine:

Amoni teaches being USB compliant. A serial interface engine (SIE) is part of the USB

specification (See for example section 10.2.2).

In regards to applicants argument that Amoni does not teach apparatus specific logic:

Amoni teaches several application specific circuits such as a mouse, pen, speaker, phone and

video, each attached to the USB bus and including the features inherent in the USB specification.

In regards to applicants argument that the action fails to establish proper motivation:

This is incorrect see action page 3.

In response to applicant's argument that the examiner's conclusion of obviousness is

based upon improper hindsight reasoning, it must be recognized that any judgment on

obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so

long as it takes into account only knowledge which was within the level of ordinary skill at the

time the claimed invention was made, and does not include knowledge gleaned only from the

applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392,

170 USPQ 209 (CCPA 1971).

In regards to applicants argument that the action admits that Stephenson fails to teach the

recited parallel decoding: The examiner disagrees. Stephenson teaches parallel decoding done

by any of the multiple detectors as well as handling the data in parallel. What Stephenson fails

to teach is NRZI decoding. Amoni teaches NRZI decoding (See USB Spec 7.1.5).

In response to applicant's arguments against the references individually, one cannot show

nonobviousness by attacking references individually where the rejections are based on

combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re*

Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

3.   Claims 1-6, 10-11, 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Stephenson, Jr. et al PN 5,081,654 in view of Govindaraman PN 6,707,396.

In regards to claims 1, 10: Stephenson teaches an integrated circuit comprising: a parallel

frame delineation module (20) having a plurality of concurrent comparators (32, 34) to delineate

received frame boundaries (abstract) within a data stream (22). Stephenson does not teach the

parallel frame delineation being in a USB peripheral NRZI data stream including NRZI decoder

using parallel data processing. Govindaraman teaches the use of a NRZI decoder module to

decode received USB NRZI data using parallel processing. It would have been obvious to a

person of ordinary skill in the art at the time of the invention to use Stephenson's sync detect as

the sync detect in Govindaraman (See figure 1) because this would have for the handling of high

speed data streams in parallel (See Stephenson et al Column 2 lines 18-25).

In regards to claim 2: Govindaraman teaches the USB being USB 2.0.

In regards to claim 3: Stephenson teaches a three stage pipeline (latch 28, 28`, 28``).

In regards to claim 4: Stephenson does not expressly teach a state machine. Official

notice is taken that a state machine is a model of a system in which all values are discrete, as in a

digital computer. See IEEE Dictionary. Since all values in Stephenson are discrete it would

have been obvious to a person of ordinary skill in the art at the time of the invention to use a

state machine to control the three stage pipeline of Stephenson because this would have allowed

for greater timing control.

In regards to claim 5: Stephenson teaches detecting the start of frame by matching a

framing pattern (Column 1 lines 20-26).

In regards to claims 6, 15-16: Stephenson teaches 16 comparators 1-8 of 32 and 1-8 of

34. Thus Stephenson teaches 11 concurrent comparators.

In regards to claim 11: Govindaraman teaches NRZI.

4.   Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stephenson,

Jr. et al PN 5,081,654 and Amoni et al PN 5,884,086.

In regards to claim 7: Amoni et al teaches an apparatus comprising: one or more

Universal Serial Bus (USB) connectors (701) to couple to a communications channel carrying a

USB data stream; a circuit comprising a USB transceiver, a serial interface engine and apparatus-

specific logic (such as mouse, pen, speaker, phone or video). Amoni et al does not teach the

USB transceiver having concurrent comparators to delineate received asynchronous game

boundaries within the USB data stream and parallel logic to decode received encoded data.

Stephenson teaches the concurrent comparators as described above. It would have been obvious

to a person of ordinary skill in the art at the time of the invention to use Stephenson's start of

frame detect because this would have for the handling of high speed data streams in parallel (See

Stephenson et al Column 2 lines 18-25). Neither teaches the system being on an ASIC. MPEP

2144.04 V B. to make integral is not a patentable distinction.

In regards to claim 8: Amoni et al teaches a hub.

In regards to claim 9: Amoni et al teaches NRZI (Column 1 lines 47-61).

5.   Claims 12-13, 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Stephenson, Jr. et al PN 5,081,654 in view of Govindaraman PN 6,707,396 as applied to claim

11 above, and further in view of Yamauchi PN 6,041,430.

In regards to claims 12, 17: Stephenson teaches 8-bit fields. Stephenson does not teach a

9 bit field. Yamauchi teaches in a data transmission of 8 bits of data including a 9th bit for parity.

It would have been obvious to use 9 bit fields including a parity bit because this would have allowed for error correction.

In regards to claim 13: Stephenson teaches concurrently searching 24 bits in 3 frames not including a parity bit for each frame. Including 1 bit for parity in each frame would make up 27 bits.

In regards to claim 18: Stephenson teaches NRZI.

In regards to claim 19: Stephenson does not expressly teach a state machine. Official notice is taken that a state machine is a model of a system in which all values are discrete, as in a digital computer. See IEEE Dictionary. Since all values in Stephenson are discrete it would have been obvious to a person of ordinary skill in the art at the time of the invention to use a state machine to control the three stage pipeline of Stephenson because this would have allowed for greater timing control.

Allowable Subject Matter

6.   Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In regards to claim 14: The USB 2.0 Specification indicates that the NRZI SOP Sync pattern should be a minimum of 6 kj pairs followed by two k's meaning 01010100. The examiner could find no reason in Govindaraman or Amoni et al which both use the USB 2.0 specification to violate the USB 2.0 specification by making the pattern be 00101010.

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

8.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing
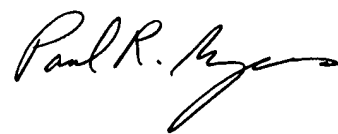
date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Paul R. Myers whose telephone number is 703 305 9656. The

examiner can normally be reached on Mon-Thur 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mark Rinehart can be reached on 703 305 4815. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PRM
October 22, 2004

PAUL R. MYERS
PRIMARY EXAMINER